

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 May 2004 (06.05.2004)

PCT

(10) International Publication Number
WO 2004/038040 A2

(51) International Patent Classification⁷: **C12Q 1/00**

(21) International Application Number:
PCT/IB2003/005427

(22) International Filing Date: 27 October 2003 (27.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0224872.2 25 October 2002 (25.10.2002) GB
PCT/EP02/1859 20 December 2002 (20.12.2002) EP
0311946.8 23 May 2003 (23.05.2003) GB

(71) Applicant (for all designated States except US): **SENSE THERAPEUTIC LIMITED** [GB/GB]; Unit 4, The Switchback, Gardner Road, Maidenhead, Berkshire, SL6 7RJ (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KOOPMANN, Jens-Oliver** [GB/GB]; C/O Sense Therapeutic Limited, Unit 4, The Switchback, Gardner Road, Maidenhead, Berkshire, SL6 7RJ (GB). **BLACKBURN, Jonathan, M.**

[GB/GB]; C/O Sense Therapeutic Limited, Unit 4, The Switchback, Gardner Road, Maidenhead, Berkshire, SL6 7RJ (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: **ENZYME ARRAY AND ASSAY**

Coupling procedures for proteins on surfaces

Random coupling



BCCP-fusion-biotin

Neutravidin

PEG-PLL-biotin

Amine coupling

Ordered coupling



PEG-PLL

(57) Abstract: The present invention relates to an enzyme array and assay for use with a mass spectrometer, particularly, though not exclusively, a laser desorption/ionisation, such as a MALDI mass spectrometer. It includes a method of determining the activity of an enzyme, or the effect a test compound has on the activity of the enzyme, using mass spectrometry comprising: providing a probe carrying an immobilised enzyme; optionally introducing the test compound; introducing one or more reactants to the immobilised enzyme for a time, and in a form sufficient for a reaction to take place; drying the probe; subjecting the probe to mass spectrometry; and determining the activity of the enzyme, or the effect the test compound had on the activity of the enzyme, by detecting the presence and/or absence of one or more products and/or the one or more reactants and is exemplified with reference to a kinase assay. It also provides an array for use with the method.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.